

10007 TECHNOLOGY EDUCATION

Institutions will be expected to demonstrate the use of performance assessments within their programs. Examples of such assessments will be provided by the Education Standards and Practices Board as guidelines. Institutions are not restricted to using the given examples, but may develop others that demonstrate candidates' ability to apply what they have learned in the K-12 school setting.

The goal of Technology Education is to develop a technologically literate society. Technology Education is an integrated, experience-based instructional program designed to prepare a population that is knowledgeable about technology-its evolution, systems, techniques, utilization, ethical considerations, and social and cultural significance. Technology Education results in the application of mathematics and science concepts in technology systems. Students discover, create, solve problems, and construct by using a variety of tools, machines, materials, processes, and computer systems.

10007.1. The program requires the study of the history, philosophy, and evolution of the field of technology education. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

Examples of performance assessments may include how to:

- describe, compare and contrast the concepts and context behind manual arts, industrial arts and technology education;
- describe, compare and contrast technology education with instructional or educational technology;
- evaluate how society was/is being reshaped by a particular invention or innovation;
- explore the contributions of diverse cultures to the current state of technology;
- assess the impact and consequences of a technological system.(Technological systems can be categorized as information systems, physical systems, and biological systems.)

10007.2 The program requires the study of the nature of technology including the scope of technology, core principles of technology, and technological relationships. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

Examples of performance assessments may include how to:

- analyze and discuss or write about the place of technology in contemporary society;
- outline the core principles of technology in the designed world and their connections with other disciplines;
- use concepts from science, math, social studies, and the humanities as tools for managing technological systems;

- incorporate characteristics of engineers, artists, designers, crafts-persons, technicians, mechanics, and sociologists in developing a solution to a problem.

10007.3 The program requires the study of technology and society including technological effects on society, technological effects on environment, how people shape technological development, and the evolution and history of technology's effects on society. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

Examples of performance assessments may include how to:

- identify the adverse effects of a technology on the environment and prepare a management strategy that could lessen adverse effects;
- consider a variety of points of view and contexts relative to solving a technological problem, identify possible solutions, and forecast results of implementing solutions
- research the development of a technology and how inventors, developers, or engineers influenced the development and implementation.

10007.4 The program requires study of design including attributes of design, engineering design, and methods to solve design problems. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

Examples of performance assessments may include how to:

- effectively communicate technical information and accurately analyze properties of materials;
- apply science and mathematics principles and skills to modeling, systems, and organization;
- describe engineering achievements and their impact on society;
- facilitate a team as they develop concepts for solving a design problem;

10007.5 The program requires the study of abilities for a technological world, including application of design process, use and maintenance of products and systems, and assessment of the impact of products and systems. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

Examples of performance assessments may include how to:

- apply design concepts to solve problems and extend human capability;
- select appropriate technologies for given situations, or describe why not to employ a technology in a given situation;
- employ the resources of technology to analyze the behavior of technological systems;

- apply scientific principles, engineering concepts, and technological systems in the solution of everyday problems.

10007.6 The program requires the study of the designed world. Areas will include medical technology, agriculture and related bio-technologies, energy and power technologies, information and communication technologies, transportation technology, manufacturing technology, and construction technology. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

Examples of performance assessments may include how to:

- express an understanding of communication systems and their complex interrelations;
- identify and apply multiple methods of technological information acquisition and utilization including use of internet resources;
- demonstrate in an experiential setting the safe, effective, and creative use of technological resources including tools, machines and materials in performing technological processes;
- evaluate energy and transportation systems and their impact on people, the environment, culture, and the economy;
- use living organisms (or parts of organisms) in an ethical manner to make or modify products, to improve humans, plants, or animals or develop micro-organisms for specific use;

10007.7 The program requires study and experiences based on the following content organizers: resources for technology, design/engineering, inventions and innovations, technology systems, intelligent machines, and technology and entrepreneurship. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

Examples of performance assessments may include how to:

- examine how resources, criteria, constraints and processes affect the design of a particular product;
- use brainstorming, visualization, modeling, constructing, testing and refining in a development process;
- appropriately use a variety of peripheral computer devices such as digital devices, scanners, printers, storage devices, robots, data capture probes, etc.;
- apply knowledge/research to areas of mass production, manufacturing, resources, management, and marketing
- develop a plan for an invention or innovation which combines technology, ingenuity and resources to meet future human needs and wants.

10007.8 The program requires the study of methods of teaching technology education including current trends, activity-oriented laboratory instruction, and authentic

application of knowledge and skills. The program uses varied performance assessments of the candidate's abilities to apply their knowledge and skills in teaching situations.

Examples of performance assessments may include how to:

- select and demonstrate methods and strategies for teaching concepts and skills related to student use of computers, productivity tools, and information access and delivery in a classroom or lab setting;
- incorporate a rich variety of methodologies throughout the program;
- use tools, materials, devices, and processes in a correct and safe manner.

10007.9 The program requires the study and experiences in developing, managing and evaluating technology education programs in schools. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

Examples of performance assessments may include how to:

- create a comprehensive technology education curriculum strategy;
- identify sources of continuing professional growth related to technology and information on technological careers, state and national technology education standards, and professional technology education organizations;
- describe, understand and foster the fundamental concepts that allow individuals to continually learn as conditions change;
- organize and manage student organizations in technology education;
- articulate issues surrounding technology assessment including the need for assessment, the role of the citizen, the role of the expert, the role of the government, the strengths and limitations of assessment.

10007.10 The program requires the study of the application of technology in instruction, specialty content preparation in educational computing and technology literacy, and the uses of technology-based productivity tools to support instruction and student learning. The program uses varied performance assessments of the candidate's understanding and ability to apply that knowledge.

Examples of performance assessments may include how to:

- demonstrate appropriate use of various technologies within their instructional practices;
- develop and evaluate electronically based portfolios;
- use technology to effectively manage communications, instructional planning, and record-keeping.

History

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